



# Digestion Filtration Standard Laboratory Module (SLM™)

## General Overview of the Digestion Filtration SLM

The Digestion Filtration SLM automates the filtration of digest from sample vessels after they have been processed by the Microwave SLM. The Digestion Filtration SLM extracts the liquid digest, rinses the vessel interior and dilutes the digest to a programmable volume.

## Environmental Protection Agency (EPA) Method

This SLM is normally used to implement USEPA Method 3051 for the digestion of soil and biological samples.

## Standard Analysis Method (SAM)

This SLM will normally be employed in a SAM used for metals analysis.

## Advantages

This SLM offers the advantage of automated operation, thus reducing labor requirements and possible human exposure to acidic liquids and fumes. It complies with Contaminant Analysis Automation Program protocols.

## General Description of the Digestion Filtration SLM

This SLM receives pressure vessels that have completed microwave-assisted acid digestion. The vessels are loaded into the SLM with a robot or manually. The SLM requires specially modified sample vessels that incorporate an integral slide valve and filter media. This slide valve effects a tight seal during digestion but is easily operated to allow dispensing of the liquid digest media. The Digestion Filtration SLM operates the slide valve on the sample vessel, dispensing the digest and permitting and the vessel interior to be rinsed. After dispensing the digest into a beaker, the SLM measures the weight of the digest and measures water into the beaker to bring the solution to the proper dilution.



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Figure 1. The Filtration SLM

## Status

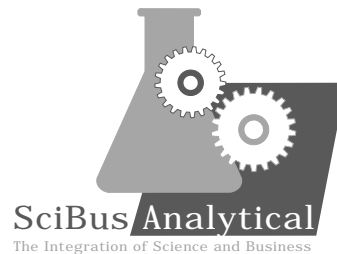
This SLM is in the proof-of-concept stage of development. It has not been validated.

## Industrial Partner

SciBus Analytical, Inc.

## Developers

The Digestion Filtration SLM was developed at Oak Ridge National Laboratory in the Robotics and Process Systems Division.



*University of Florida*  
*University of Tennessee*  
*University of Texas*

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